

3.0 AFFECTED ENVIRONMENT

3.11 Noise

Noise has long been accepted as a byproduct of urbanization, but only recently has it received much social attention as a potential environmental hazard. Excessive and/or sustained noise can contribute to both temporary and permanent physical impairments, such as hearing loss and increased fatigue, as well as stress, annoyance, anxiety, and other psychological reactions in humans.

The most common unit used to measure noise levels is the A-weighted decibel (dBA), which is a measurement of the noise energy emitted from a monitored noise source. The A-weighted frequency scale has been adjusted to correlate noise or sound to the hearing range of the human ear, and ranges from 1.0 dBA at the threshold of hearing, to 140 dBA at the threshold of pain.

The existing noise environment in the planning area varies depending upon location, but ranges from very quiet in remote, wilderness areas to moderate on or adjacent to urban lands. The noise environment in the urban core of the Coachella Valley, which generally extends from Desert Hot Springs and Palm Springs on the west to Indio and Coachella on the east, is consistent with that of a low to medium-density, suburban community.

Motor Vehicle Noise. Noise monitoring and modeling data conducted within the planning area indicate that the primary noise source is motor vehicle traffic on highways and major arterials. The level of noise generated varies with traffic volume, vehicular speed, truck mix, and roadway cross-section and geometric design. Typically, the greater the vehicle speed and truck mix, the greater the level of noise.

Among the roadways producing the highest noise levels in the planning area are Interstate-10 and State Highway 111. These highways pass through or in close proximity to BLM land only in limited locations, including east of Indio and in the San Geronio Pass area. Traffic along State Highways 74 and 62, which pass through BLM land in the Santa Rosa Mountains and the Morongo Valley, respectively, generate moderate noise levels during daytime hours, but these levels are expected to drop considerably at night. Most BLM lands are remote and distant from major highways and arterials. Occasional noise from motor vehicle traffic may be generated on access roads; however, noise levels are extremely limited due to very low traffic volumes and speeds.

Railroad Traffic Noise. Railroad traffic constitutes an occasional, but less intrusive element to the noise environment. The passage of trains results in considerable noise impacts to adjacent lands, although the impacts are periodic and of short duration. Railroad tracks extend along the central axis of the Coachella Valley in a northwest-southeasterly direction. The tracks run parallel with and just south of Interstate-10 through much of the valley, and extend southeast along State Highway 111 from Indio

to Imperial County. These facilities carry between 30 and 40 trains per day. Most rail activity is freight traffic operated by Union Pacific Railroad, although Amtrak provides passenger service along the same tracks to Palm Springs and Indio. Union Pacific is planning to add a full second track, parallel to the existing one, between 2001 and 2003, and is anticipating a 50% to 75% increase in regional rail traffic. This increase will further impact the noise environment on adjacent lands.

These tracks cross through BLM land in the western Coachella Valley, in the Garnet/Indian Avenue vicinity north of Palm Springs. Noise measurements conducted in this vicinity for the Palm Springs General Plan (1993) place the 60 dB CNEL contour 1,050 feet from the railroad tracks, the 65 CNEL contour 570 feet from the tracks, and the 70 CNEL contour 310 feet from the tracks.¹

Aircraft Noise. Overflights associated with the Palm Springs, Bermuda Dunes, and Desert Resorts Regional Airports also generate occasional, but intrusive noise impacts in the planning area. However, neither of these facilities is located on or in close proximity to public BLM lands, and noise associated with airport operations does not adversely affect BLM lands.

Stationary Source Noise. Stationary noise sources in the CDCA planning area include grading and construction activity, power tools, household appliances, high-level radio and/or television usage, and mechanical equipment, such as heating and air conditioning units. Noise from roof-mounted equipment, such as fans and compressors, which emit a constant hum, can penetrate adjacent property and adversely affect the quality of life in residential neighborhoods. Industrial noise generated at loading and transfer areas, outdoor warehousing operations, and unscreened commercial or industrial activities, can also result in objectionable noise levels.

Outlying, remote BLM land, including large-scale open space and wilderness areas, is virtually free from stationary noise intrusion. Such areas include undeveloped land in the Indio Hills, Mecca Hills, and San Jacinto, Santa Rosa, San Bernardino, Little San Bernardino, and Orocopia Mountains. Developed BLM lands and those in close proximity to urban development may be subject to low to moderate noise levels.

Wind Turbine Noise. Wind Energy Conversion Systems (WECS) have been constructed on BLM-administered land in the western Coachella Valley. Wind turbine noise varies based on the turbine model and design specifications, including the age, height, and tower damping features of each turbine. Environmental factors, including intervening terrain, vegetation, wind speed and direction, and distance and elevational offsets between the turbine and the noise receptor, also affect ambient noise levels.

Wind turbines generate two types of noise: mechanical and aerodynamic. Mechanical noise is associated with the basic operating components of the turbine, including gearboxes and wheels. Improvements in technology and engineering have virtually

¹ "City of Palm Springs General Plan," Smith, Peroni & Fox, adopted March 3, 1993.

eliminated mechanical noise from modern wind turbines, particularly those manufactured after the early 1980s. Aerodynamic noise is best described as the “swish” sound generated by the rotation of rotor blades; the higher the rotational speed, the louder the sound. Turbine manufacturers have minimized aerodynamic noise in recent years by smoothing blade surfaces, carefully designing blade edges and rotor tips, and assuring blades are not damaged during turbine installation. Vibrations have been reduced on some larger turbines by drilling holes into the chassis frame to ensure that the frame does not vibrate in step with other turbine components.

Riverside County has adopted a WECS ordinance (County Municipal Code Section 17.224.040L) that requires the projected wind turbine noise level at each nearby sensitive receptor (habitable dwelling, hospital, school, library, or nursing home) to be at or below 55 dB(A); this level shall be reduced by 5 dB(A) where it is projected that pure tone noise will be generated. BLM utilizes the same standard for WECS development occurring on BLM lands. BLM requires each turbine developer to prepare a noise study demonstrating that the project will meet this standard. In most cases, the distance between the wind turbines and the nearest sensitive receptors is great enough that operational noise impacts are not considered significant.

Two recent acoustical analyses prepared for proposed WECS projects on BLM lands in the San Geronio Pass area indicate that wind turbine noise in this vicinity does not exceed County/BLM accepted noise levels. One project involved the construction of thirty-two 1.5-megawatt (mw) turbines and three 750-kilowatt (kW) turbines on County and BLM lands immediately west of Whitewater Hill. The study concluded that noise impacts on the nearest sensitive receptors, residences located approximately 1,600 feet from the proposed turbines, would be well below the 55 dB(A) standard (Hersh Walker Acoustics, May 8, 2001).² A second project involved the construction of twenty 1.5-mw and four 660-kw turbines in the same geographic area. The acoustical study demonstrated that noise generated by the turbines would not exceed the County/BLM threshold of 55 dB(A) at the outer perimeter property line or the nearest sensitive receptors (Hersh Walker Acoustics, January 4, 2001).³

² “Acoustical Analysis Report, Noise Impact Analysis, Commercial WECS Permits 108 and BLM Grants, Section 12, T3S, R3E, Riverside County, CA,” Hersh Walker Acoustics, May 8, 2001.

³ “Environmental Assessment (EA) #01-35, Right-of-Way Grant CA-9755 San Geronio Farms,” U.S. Department of the Interior, Bureau of Land Management, Palm Springs-South Coast Field Office, October 29, 2001.